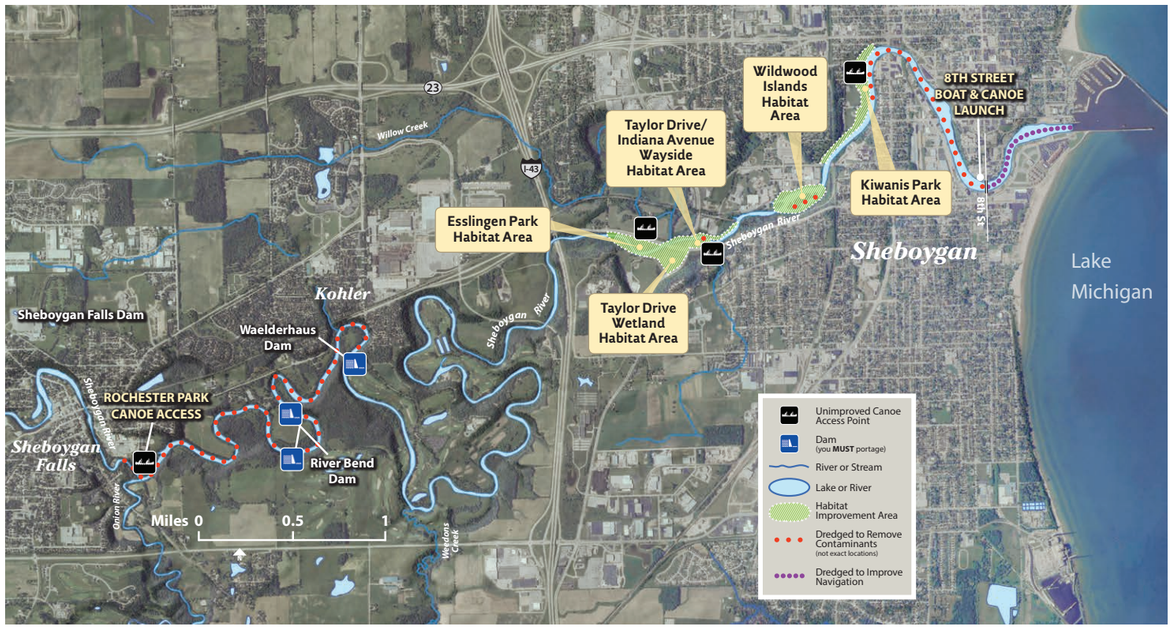
WDNR

Above: Signs keep public safe and informed.
Right: Bird watching in Esslingen Park.

Amy Kretlow

Reaching our targets will lead us to our goal of delisting the AOC, which means the ecological benefits of the Sheboygan River have been restored to an acceptable level. We will know we have achieved this when public uses are no longer impaired by legacy contamination and native plants and wildlife are sustainably protected. With toxic sediments removed and habitat restoration completed, the river is becoming a more and more valuable resource for recreation and the local economy.



Sheboygan River – part of the largest fresh surface water resource in the world – the Great Lakes ecosystem

For more details about AOC progress and projects, refer to the Area of Concern Remedial Action Plan Updates, available at **http://dnr.wi.gov/topic/greatlakes/aoc.html**

UW Extension Regional Natural Resources Program
Wisconsin Dept. of Natural Resources
Great Lakes Restoration
Environmental Resources Center

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Graphic Design by Jeffrey J. Strobel, UW-Extension Environmental Resources Center.

http://dnr.wi.gov/topic/greatlakes/sheboygan.html

Sheboygan River Area of Concern

BENEFICIAL USE IMPAIRMENT RESTORATION REPORT

Summer 2015

The Sheboygan River was designated an Area of Concern (AOC) in the 1980s because contaminated river sediment impaired public benefits such as fish consumption, healthy fisheries, shipping channels and wildlife habitat.

Debbie Beyer, UWEX

Wildwood Island restoration.

April Marcongeli

View from Rotary Riverfront Park

Virginia Treuthardt

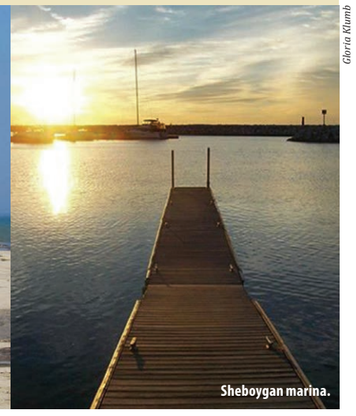
The Wisconsin Department of Natural Resources (WDNR) and citizen groups identified nine Beneficial Use Impairments (BUIs) to target here for improving the river.

See progress report inside ➡

James E. Schultz

Fishing on South Pier.

Gloria Klumb



Sheboygan marina.

Sheboygan River AOC – Restoration Status Update

Summer 2015

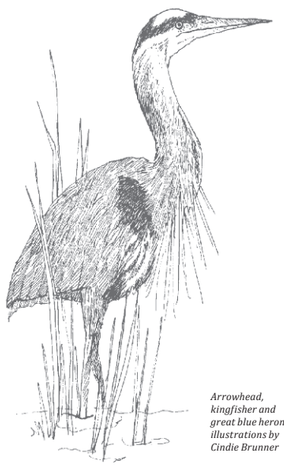
Restoration has been fast tracked in Sheboygan thanks to the AOC being identified as a priority by the US Environmental Protection Agency in 2010. After careful planning, all actions deemed necessary for achieving AOC goals have been completed including removing more than 400,000 cubic yards of contaminated bed sediments from the lower river and inner harbor and restoring fish and wildlife habitat.

Reggie Gauger

Lesser Yellow Legs.

With target actions complete, the focus is now on monitoring to verify that AOC goals are being met. It may take time for the natural system to recover following cleanup actions and habitat restoration. If goals are not being met after 3-5 years, the AOC will continue monitoring while further investigation occurs to understand the reasons for not meeting the goals.

This update shows the current status (Summer 2015) of the removal phases for nine impairments of the Sheboygan River AOC – *complete, underway, or not started* – and the next steps. Dates in parentheses indicate the anticipated project completion.



Arrowhead, kingfisher and great blue heron illustrations by Cindie Brunner

John Masterson

Sediment removal by Army Corps of Engineers.

Ruth Markworth Harker

Kiwanis Park restoration.

BUI Removal Phases:

- **MA** **MONITOR & ASSESS:** define the problem, gather data and review literature, consult with experts.
- **DP** **DEVELOP AOC PROJECTS:** engage stakeholders to develop the set of projects that are necessary for reaching AOC goals.
- **IP** **IMPLEMENT PROJECTS:** take action to improve conditions within the AOC if monitoring data shows goals are not being met.
- **VR** **VERIFY RESULTS:** after actions have been taken, monitor to determine if target has been met.
- **RM** **FORMAL BUI REMOVAL:** targets have been met; BUI removal documentation is being prepared or reviewed, or has been submitted.

Status of Each Phase:

not started | underway | complete

There are health concerns with eating fish & wildlife

NEXT STEPS:

- Allow time for populations to recover now that known contamination sources (polluted riverbed and harbor sediment and floodplain soil) have been removed.
- Monitor contaminants in fish (2015) and wildlife (2017-2019) and re-evaluate consumption advisories.

MA ★ | DP ★ | IP ★ | VR ➲ | RM ○

Fish & wildlife populations are degraded

NEXT STEPS:

- Complete the Fish and Wildlife Population and Habitat Management and Restoration Plan (2015).
- Complete monitoring of fish, invertebrates, mink, birds, bats, mussels, amphibians and reptiles (through 2016) to assess outcomes of projects completed in 2012.

MA ★ | DP ★ | IP ★ | VR ➲ | RM ○

There are increased rates of fish tumors & deformities

NEXT STEPS:

- Allow time for fish populations to recover following completion of sediment cleanup which removed main source of tumor causing polycyclic aromatic hydrocarbons (PAHs).
- Repeat fish sampling to determine if tumor rate has decreased to levels comparable to unimpaired sites (2017).

MA ★ | DP ★ | IP ★ | VR ➲ | RM ○

There is increased potential for bird & animal deformities & reproductive problems

NEXT STEPS:

- Complete data analysis of tree swallow study to determine if harmful polychlorinated biphenyl (PCB) contamination in birds is reduced following sediment cleanup (2015).
- Conduct mink population assessment to determine if reproductive problems exist (2014- 2016).

MA ★ | DP ★ | IP ★ | VR ➲ | RM ○

Communities of sediment-dwelling organisms are degraded

NEXT STEPS:

- Complete data analysis of United States Geological Survey (USGS) study to compare AOC sediment-dwelling organisms to similar sites considered unimpaired (2015).
- Determine if sediment-dwelling organisms have recovered and BUI impairment can be removed (2016).

MA ★ | DP ★ | IP ★ | VR ➲ | RM ○

Dredging activities for commerce or navigation are restricted

NEXT STEPS:

- Target Reached!
- Formal BUI removal application process underway. Removal of BUI designation anticipated in 2015.

MA ★ | DP ★ | IP ★ | VR ★ | RM ➲

Excessive nutrients cause undesirable algae

NEXT STEPS:

- Target Reached!
- BUI removal documentation and public input process set to begin in 2015.

MA ★ | DP ★ | IP ★ | VR ★ | RM ➲

Communities of small organisms living in the water are degraded

NEXT STEPS:

- Complete data analysis of USGS study to compare AOC plankton populations (small organisms living in the water) to similar sites considered unimpaired (2015).
- Determine if plankton communities have recovered or if they are degraded due to toxic water conditions (2016).

MA ★ | DP ★ | IP ★ | VR ➲ | RM ○

Loss of fish & wildlife habitat

NEXT STEPS:

- Complete the Fish and Wildlife Population and Habitat Management and Restoration Plan (2015).
- Continue maintenance of 7 habitat restoration projects completed in 2012 (2015).
- Evaluate aquatic habitat including fish habitat assessments and aquatic macrophyte surveys (2014-2016).

MA ★ | DP ★ | IP ➲ | VR ➲ | RM ○

Monitor and Assess (MA) | Develop AOC Projects (DP) | Implement Projects (IP) | Verify Results (VR) | Formal BUI Removal (RM) → BUI REMOVED

← RETURN TO PROCESS STEPS IF TARGETS NOT REACHED